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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,193	06/02/2006	Noriyuki Tajima	P30030	3321

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RESTON, VA 20191		

EXAMINER	
LEUNG, PHILIP H	

ART UNIT	PAPER NUMBER
3742	

NOTIFICATION DATE	DELIVERY MODE
01/25/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
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Office Action Summary

Application No.

10/596,193

Applicant(s)

TAJIMA ET AL.

Examiner

Philip H. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6-11, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricoh (JP 2003-017221) (previously cited by the applicant), in view of Zislin (RU 2055913) (newly cited) or Japanese Patent Publication 2-120792 (hereinafter JP'797) (previously cited by the applicant).

Ricoh shows a heating apparatus and image forming apparatus comprising an exciting coil 3b made up of a plurality of windings of a conductor wire for generating a magnetic field; a heating element (1c of roller 1) that is heated by means of electromagnetic induction through an action of the magnetic field; and an abnormally high temperature detection section S2 that detects that said heating element reaches an abnormally high temperature, wherein: said heating element is made up of a body (roller 1) of rotation which moves with respect to said exciting coil; said exciting coil is wound along the axial direction of the body of rotation and disposed so as to face the outer surface of the body of rotation (see Figures 1-10 and the English abstract). Therefore, Ricoh shows an induction image fixing apparatus having every feature and structure as claimed except that the temperature detection section is not "between conductor wires forming a winding bundle of the conductor wire of the exciting coil" as now claimed. Zislin shows an induction heating device including an induction exciting coil 4 surrounding a pipe to be heated

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and temperature detectors 7, 8 located between the coil turns to detect the temperature in the working zone and inside the coil winding bundle (see the Figure and the English abstract).

JP'797 also shows an induction heating apparatus having an induction coil 2 surrounding a tunnel work zone and a temperature detector 9 located between the coil turns for detecting the temperature inside the coil winding bundle and closed to the workpiece 5 (see Figures 1-4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ricoh to position the temperature detector S2 inside the coil turns of the winding bundle to detect the temperature inside the coil to more precisely control the heating operation to obtain better image fixing result, in view of the teaching of Zislin or JP'797. The exact arrangement would have been a matter of engineering expediencies depending on the overall structure of the heating roller and the induction coil.

3. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricoh (JP 2003-017221), in view of Zislin (RU 2055913) or Japanese Patent Publication 2-120792 (hereinafter JP'797), as applied to claims 1, 6-11, 14 and 15, above and further in view of Matsushita (JP 2001-188430) or Canon (JP 8-16006) (both previously cited by the applicant).

As pointed out above, Ricoh shows an induction image fixing apparatus having every feature and structure as claimed except for the explicit showing of the core structure for the induction heating coil. Matsushita discloses a heating device equipped with a center core, which is configured from a ferromagnetic member that is disposed at the center of the windings of the excitation coil, and side cores, which are configured from ferromagnetic members that are disposed on the outsides of the winding bundles of the excitation coil (see Figures and the

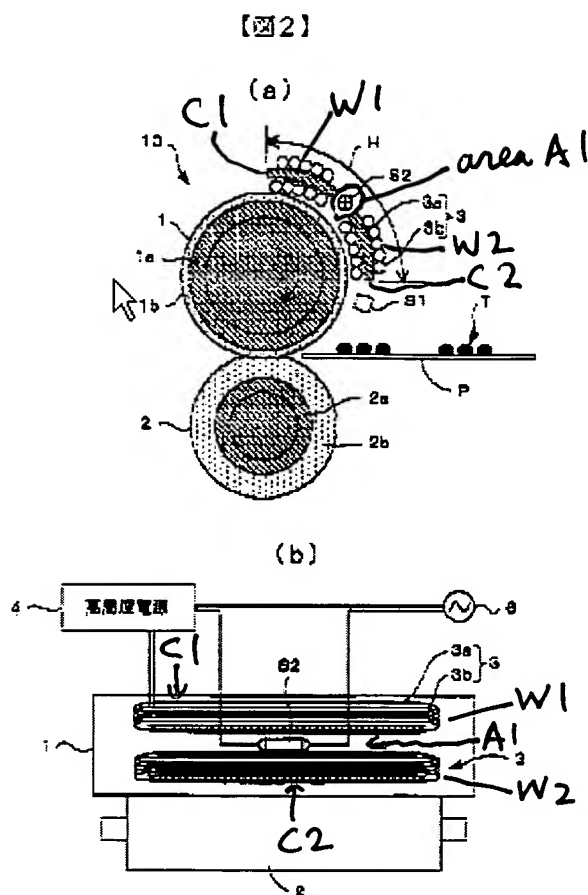
English abstract). Canon also shows a heating device wherein the means for detecting abnormal temperatures is sandwiched between the core and the excitation coil by means of the side parts of the winding bundles of the excitation coil (see all Figures and the English abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ricoh to use any suitable magnetic cores with the induction coils to better shape the magnetic flux for better heating efficiency and result, in view of the teaching of Matsushita or Canon. The exact core arrangement would have been a matter of engineering expediencies depending on the overall structure of the heating roller and the induction coil.

4. Claims 3, 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricoh (JP 2003-017221), in view of Matsushita (JP 2001-188430) or Canon (JP 8-16006).

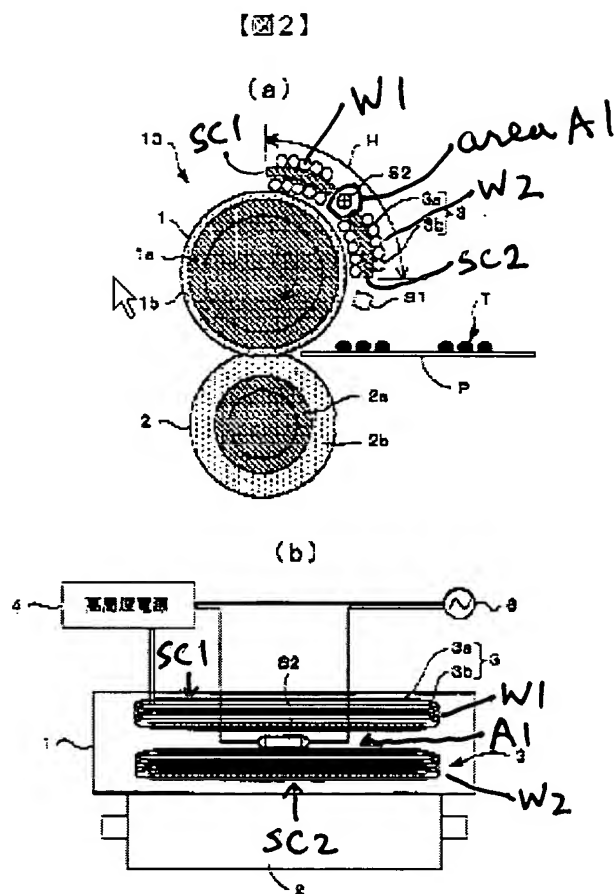
Ricoh shows a heating apparatus comprising: an exciting coil 3b made of a plurality of windings of a conductor wire for generating a magnetic field; a heating element (1c of roller 1) that is heated by electromagnetic induction through an action of the magnetic field; an abnormally high temperature detection section S2 that detects that said heating element reaches an abnormally high temperature (see Figures 1-10 and the English abstract). Most importantly, as pointed out previously, there is no limitation that requires the temperature sensor be “disposed inside the coil windings”. Therefore, Ricoh shows an induction image fixing apparatus having every feature and structure as claimed except for the explicit showing of that coil supporting element 3a is a core made of a ferromagnetic member. Matsushita discloses a heating device equipped with a center core, which is configured from a ferromagnetic member that is disposed at the center of the windings of the excitation coil, and side cores, which are configured from

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ferromagnetic members that are disposed on the outsides of the winding bundles of the excitation coil (see Figures and the English abstract). Canon also shows a heating device wherein the means for detecting abnormal temperatures is sandwiched between the core and the excitation coil by means of the side parts of the winding bundles of the excitation coil (see all Figures and the English abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ricoh to use any suitable magnetic cores with the induction coils to better shape the magnetic flux for better heating efficiency and result, in view of the teaching of Matsushita or Canon. The exact core arrangement would have been a matter of engineering expediencies depending on the overall structure of the heating roller and the induction coil. When Ricoh were so modified by using a ferromagnetic member for the supporting element 3a, the claimed limitation “a center core made of a ferromagnetic member disposed at a center position of a winding bundle of the conductor wire of said exciting coil, wherein said abnormally high temperature detection section is disposed on a side of the winding bundle interposed between said exciting coil and said center core” of claim 3 and the limitation “a side core made of a ferromagnetic member disposed on an outer side of a winding bundle of the conductor wire of said exciting coil, wherein said abnormally high temperature detection section is disposed on a side of the winding bundle of the conductor wire of said exciting coil, in an area interposed between said exciting coil and said side core” of claim 4 would be met for the following reasons. In regard to claim 3; the supporting element including 2 sections would be the claimed center core which would have two portions C1 and C2 and the sensor S2 would be in an area (A1) interposed between the coil winding W1 and said center core C2, as shown below:



Similarly, in regard to claim 4; the supporting element including 2 sections would be the claimed side core which would have two portions SC1 and SC2 (SC1 is on the side of coil winding W2 and SC2 is on the side of coil winding W1) and the sensor S2 would be in an area (A1) interposed between the coil winding W1, W2 and said side core SC2, SC1, respectively, as shown below:



5. Applicant's arguments filed 11-15-2007 have been fully considered but they are not persuasive. The claimed structure of claims 3, 4 and 13 still do not define over the art used in the previous rejection of these claims, Ricoh (JP 2003-017221), in view of Matsushita (JP 2001-188430) or Canon (JP 8-16006) for the reasons specifically set forth above. Applicant's arguments with respect to claims 1, 2, 5-11, 14 and 15 have also been considered but are moot in view of the new ground(s) of rejection.

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6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).


Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Philip H Leung
Primary Examiner
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P.Leung/pl
1-18-2008